APPENDIX G – MODEL STORMWATER MANAGEMENT ORDINANCES

September 2002 Model Post-Construction Storm Water Management Ordinance

For Communities Served by the Milwaukee Metropolitan Sewerage District

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District Note: *The Department of Natural Resources (DNR) originally developed this model ordinance as Chapter NR 152, Appendix B, Wis. Adm. Code. (2002).*

This model does not Include Appendix A to NR 152, The Model Ordinance for Construction Site Erosion Control at sites where construction does not include the construction of buildings.

DNR Note: This model ordinance includes the use of brackets [ ] around phrases that are to be filled in by the municipality. For example, the phrase [administering authority] is frequently used. Where the municipality chooses to have the ordinance administered by the City Engineer, the phrase [administering authority] should be replaced by "City Engineer". In a few places, the model ordinance includes phrases in brackets that are underlined [_____]. In these cases, one of the underlined phrases should be selected verbatim. For example, if the phrase includes statutory citations, several underlined choices may be given such as [59.693, 60.627, 61.354, or62.234]. A county would replace the phrase in brackets with "59.693", because that is the appropriate citation for the county to use.

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AN ORDINANCE TO CREATE CHAPTER [NUMBER] OF THE [CODE OR ORDINANCE] OF THE [NAME OF MUNICIPALITY] RELATING TO POST-CONSTRUCTION STORM WATER MANAGEMENT

The [governing body] of the [name of municipality] does hereby ordain that Chapter [number] of the [code or ordinance] of the [name of municipality] is created to read as follows:

[CHAPTER ------]
POST-CONSTRUCTION STORM WATER MANAGEMENT

S.01 AUTHORITY

(1) This ordinance is adopted by the [governing body] under the authority granted by s. [59.693, for counties; 60.627, for towns; 61.354, for villages; or 62.234, for cities], Wis. Stats. This ordinance supersedes all provisions of an ordinance previously enacted under s. [59.69, 60.62, 61.35, or 62.23], Wis. Stats., that relate to storm water management regulations.

S.02 FINDINGS OF FACT

The [governing body] finds that uncontrolled, post-construction runoff has a significant impact upon water resources and the health, safety and general welfare of the community and diminishes the public enjoyment and use of natural resources. Specifically, uncontrolled post-construction runoff can:

(1) Degrade physical stream habitat by increasing stream bank erosion, increasing streambed scour, diminishing groundwater recharge, diminishing stream base flows and increasing stream temperature;

(2) Diminish the capacity of lakes and streams to support fish, aquatic life, recreational and water supply uses by increasing pollutant loading of sediment, suspended solids, nutrients, heavy metals, bacteria, pathogens and other urban pollutants;

(3) Alter wetland communities by changing wetland hydrology and by increasing pollutant loads;

(4) Reduce the quality of groundwater by increasing pollutant loading;

(5) Threaten public health, safety, property and general welfare by overtaxing storm sewers, drainage ways, and other minor drainage facilities;

(6) Threaten public health, safety, property and general welfare by increasing major flood peaks and volumes;

(7) Undermine floodplain management efforts by increasing the incidence and levels of flooding; **and**

(8) Aggravate excessive infiltration and inflow of water into sanitary sewer connections during peak storm events causing the conveyance system to surcharge, overflow or backup into basements.

S.03 PURPOSE

This chapter integrates federal and state construction post-construction site stormwater water quality standards with duties to reasonably manage the quantity of water run-off for regional flood abatement. This chapter implements the Milwaukee Metropolitan Sewerage District rules on release rates for development creating more than a de minimis amount of new impervious surface, to reduce the probability of increased regional floods as the metropolitan area approaches full build-out forecast for 2050.

S.04 STORMWATER QUALITY AND QUANTITY MANAGEMENT APPLICABILITY

(1) The water quality management duties apply to property development disturbing 5 or more acres or property development disturbing one or more acres after March 10, 2003, and the water quantity management duties apply to **development that increases impervious surface by one-half acre or more**, unless the site is exempt under paragraph (2) **or (3)**.

***Note**: The 5 and 1 acre land disturbance thresholds are the state and federal laws regarding applicability of construction site erosion control permits. The half acre or more of new impervious surface is the MMSD criteria.*

(2) A site meeting any one of the following criteria is exempt from **Stormwater quality** requirements.

a. A redevelopment post-construction site with no increase in exposed parking lots or roads.

b. A post-construction site with less than 10% connected imperviousness based on complete development of the post-construction site, provided the cumulative area of all parking lots and rooftops is less than one acre.

c. Nonpoint discharges from agricultural facilities and practices.

d. Nonpoint discharges from silviculture activities.

e. Routine maintenance for project sites under 5 acres of land disturbance if performed to maintain the original line and grade, hydraulic capacity or original purpose of the facility.

f. Underground utility construction such as water, sewer and fiberoptic lines. This exemption does not apply to the construction of any above ground structures associated with utility construction.

(3) Water quantity management duties do not apply if:

Note: local ordinances may be more stringent, these are MMSD exemptions.

a. Residential Infill where the lot is five acres or less, the development is exclusively residential, the net increase in the area of impervious surface is less than 20% of the area of the site; and each boundary of the site is contiguous to: sites that contain earlier development served by sanitary sewers, streets, or public water supply when the governmental unit receives the plans for the new development or parkland; or other public land, a utility right-of-way, or a watercourse; or,

b. Sites where the area of impervious surface after development will be 5% or less of the total area of the site;

c. Recreational trails if the trail is less than or equal to 10 feet in width and has a continuous pervious buffer at least 5 feet wide on each side, disregarding interruption by streets, driveways, or other impervious surfaces crossing the trail. [; or]

[d. Sites that are riparian to [Lake Michigan]; [the Kinnickinnic River, downstream of Chase Avenue]; [the Menomonee River, downstream of 27th Street]; or [the Milwaukee River, downstream of North Avenue]].

[e. Note: Local option to exclude property not within a Watershed subject to flooding problems, which the MMSD has volunteered to undertake abatement projects. The Option is an opportunity. A municipality undertaking runoff management techniques needs financing. Those costs can be recovered from all new development, even if outside the watershed, with uniform impact fees which reflect the costs of the "runoff management techniques" being pursued by the community. See "jurisdiction" below.]

f. Notwithstanding the applicability requirements in paragraph (a), this ordinance applies to post-construction sites of any size that, in the opinion of the [administering authority], is likely to result in runoff that exceeds the capacity of the existing drainage facilities or **the level of flooding protection in a watercourse** that causes undue channel erosion, that increases water pollution by scouring or the transportation of particulate matter or that endangers property or public safety.

(4) Comity. State agencies should design and incorporate best management practices for surface water quality and stormwater quantity management for new impervious surfaces. The runoff management techniques should be the same as flood abatement plans and techniques utilized by local governments in the watershed. The lead agency preparing an environmental assessment for a federal or state project shall identify the mitigating runoff management techniques to prevent increases in peak flood flows from new impervious areas.

Note: See Trans 400 (Environmental Assessment) and Trans 401 (2003 revisions to conform with NR 151 standards). Wisconsin Department of Transportation (WisDOT) and Wis. DNR have a jurisdictional memorandum of understanding per §281.33 (2), Wis. Stats., limited to management of pollutants in stormwater. Trans 401 is narrowly tailed to BMPs for pollution

abatement and design criteria for transportation projects. Neither DNR nor DOT rules address post construction peak runoff and flooding in fully urbanized areas, but each agency's environmental assessment should consider the impacts of new impervious surfaces and the technical and economically feasible alternatives to mitigate the adverse impacts. More stringent local stormwater management requirements for peak runoff do not conflict with the state policy on controlling pollutants discharged from stormwater point sources. The state rules address different adverse impacts of stormwater runoff based on different probabilities and storm intensity.

Note continued: Finally, Trans 401 allows a de minimis exemption from water quality BMPs for highway improvements of less than 1.5 miles and widening of a road bed by less than 100 feet. Chapter 13, MMSD Rules and this local ordinance to not treat impervious highways any different than other impervious surfaces. The same threshold of one-half acre or more of new impervious surface for purposes of water quantity BMPs applies.

S.05 DEFINITIONS

(1) "Administering authority" means a governmental employee under s. [59.693; 60.627; 61.354; 62.234], Wis. Stats., designated by the [governing body] to administer this ordinance.

(2) "Agricultural facilities and practices " has the meaning given in s. 281.16, Wis. Stats.

(3) "Average annual rainfall" means a calendar year of precipitation, excluding snow, which is considered typical.

(4) "Best management practice" or "BMP" means structural or non-structural measures, practices, techniques or devices employed to:

(a) Avoid or minimize sediment or pollutants carried in runoff to waters of the state **or**

(b) Manage the rate or volume of runoff.

(5) "Business day" means a day the office of the [administering authority] is routinely and customarily open for business.

(6) "Cease and desist order" means a court-issued order to halt land disturbing construction activity that is being conducted without the required permit.

(7) "Combined sewer system" means a system for conveying both sanitary sewage and storm water runoff.

(8) "Connected imperviousness" means an impervious surface that is directly connected to a separate storm sewer or water of the state via an impervious flow path.

(9) "Critical time" means the period starting at the time of peak rainfall intensity with a duration equal to the time of concentration of the watershed.

(10) "Design storm" means a hypothetical discrete rainstorm characterized by a specific duration, temporal distribution, rainfall intensity, return frequency, and total depth of rainfall.

(11) "Development" means **construction of** residential, commercial, industrial or institutional land uses and associated roads**, including re-development.**

(12) "Division of land" means the creation from one parcel of [number] or more parcels or building sites of [number] or fewer acres each in area where such creation occurs at one time or through the successive partition within a 5 year period.

(13) "Effective infiltration area" means the area of the infiltration system that is used to infiltrate runoff and does not include the area used for site access, berms or pretreatment.

(14) "Erosion" means the process by which the land's surface is worn away by the action of wind, water, ice or gravity.

(15) "Exceptional resource waters" means waters listed in s. NR 102.11, Wis. Adm. Code.

(16) "Extraterritorial" means the unincorporated area within 3 miles of the corporate limits of a first, second, or third class city, or within 1.5 miles of a fourth class city or village.

(17) "Final stabilization" means that all land disturbing construction activities at the construction site have been completed and that a uniform, perennial, vegetative cover has been established, with a density of at least 70% of the cover, for the unpaved areas and areas not covered by permanent structures, or employment of equivalent permanent stabilization measures.

(18) "Financial guarantee" means a performance bond, maintenance bond, surety bond, irrevocable letter of credit, or similar guarantees submitted to the [administering authority] by the responsible party to assure that requirements of the ordinance are carried out in compliance with the storm water management plan.

(19) "Governing body" means town board of supervisors, county board of supervisors, city council, village board of trustees or village council.

(20) "Impervious surface" means **any pavement or structural element that prevents rain, surface water runoff, or melting snow from infiltrating into the ground below, including, but not limited to, roofs and paved roads, driveways, and parking lots.**

(21) "In-fill area" means an undeveloped area of land located within existing development.

(22) "Infiltration" means the entry of precipitation or runoff into or through the soil.

(23) "Infiltration system" means a device or practice such as a basin, trench, rain garden or swale designed specifically to encourage infiltration, but does not include natural infiltration in

pervious surfaces such as lawns, redirecting of rooftop downspouts onto lawns or minimal infiltration from practices, such as swales or road side channels designed for conveyance and pollutant removal only.

(24) "Karst feature" means an area or surficial geologic feature subject to bedrock dissolution so that it is likely to provide a conduit to groundwater, and may include caves, enlarged fractures, mine features, exposed bedrock surfaces, sinkholes, springs, seeps or swallets.

(25) "Land disturbing construction activity" means any man-made alteration of the land surface resulting in a change in the topography or existing vegetative or non-vegetative soil cover, that may result in runoff and lead to an increase in soil erosion and movement of sediment into waters of the state. Land disturbing construction activity includes clearing and grubbing, demolition, excavating, pit trench dewatering, filling and grading activities.

(26) "Maintenance agreement" means a legal document that provides for long-term maintenance of storm water management practices.

(27) "MEP" or "maximum extent practicable" means a level of implementing best management practices in order to achieve a performance standard specified in this ordinance which takes into account the best available technology, cost effectiveness and other competing issues such as human safety and welfare, endangered and threatened resources, historic properties and geographic features. MEP allows flexibility in the way to meet the performance standards and may vary based on the performance standard and site conditions.

(28) "New development" means development resulting from the conversion of previously undeveloped land or agricultural land uses.

(29) "Off-site" means located outside the property boundary described in the permit application.

(30) "On-site" means located within the property boundary described in the permit application.

(31) "Ordinary high-water mark" has the meaning given in s. NR 115.03(6), Wis. Adm. Code.

(32) "Outstanding resource waters" means waters listed in s. NR 102.10, Wis. Adm. Code.

(33) "Percent fines" means the percentage of a given sample of soil, which passes through a # 200 sieve.

Note: *Percent fines can be determined using the "American Society for Testing and Materials", volume 04.02, "Test Method C117-95 Standard Test Method for Materials Finer than 75-μm (No. 200) Sieve in Material Aggregates by Washing". Copies can be obtained by contacting the American society for testing and materials, 100 Barr Harbor Drive, Conshohocken, PA 19428-2959, or phone 610-832-9585, or on line at: http://www.astm.org.*

(34) "Performance standard" means a narrative or measurable number specifying the minimum acceptable outcome for a facility or practice.

(35) "Permit" means a written authorization made by the [administering authority] to the applicant to conduct land disturbing construction activity or to discharge post-construction runoff to waters of the state.

(36) "Permit administration fee" means a sum of money paid to the [administering authority] by the permit applicant for the purpose of recouping the expenses incurred by the authority in administering the permit.

(37) "Pervious surface" means an area that releases as runoff a small portion of the precipitation that falls on it. Lawns, gardens, parks, forests or other similar vegetated areas are examples of surfaces that typically are pervious.

(38) "Pollutant" has the meaning given in s. 283.01(13), Wis. Stats.

(39) "Pollution" has the meaning given in s. 281.01(10), Wis. Stats.

(40) "Post-construction site" means a construction site following the completion of land disturbing construction activity and final site stabilization.

(41) "Pre-development condition" means the extent and distribution of land cover types present before the initiation of land disturbing construction activity, assuming that all land uses prior to development activity are managed in an environmentally sound manner.

(42) "Preventive action limit" has the meaning given in s. NR 140.05(17), Wis. Adm. Code.

(43) "Public right of way" means any road, alley, street, parking lot, sidewalk, plaza, mall, or pathway owned by or dedicated to a governmental unit.

(44) "Recreational trail" means a path that is:

(a) distinctly set apart from a roadway, street, or sidewalk;

(b) designed for activities such as jogging, walking, hiking, bird-watching, bicycle riding, roller skating, or similar recreational activities not involving the use of motorized vehicles; and

(c) not a sidewalk according to sec. 340.01(58), Wis. Stats.

(45) "Regional flood" means the peak flow and peak elevation of water with a one percent (1%) probability of occurring during any one year, considering rainfall time and intensity patterns, rainfall duration, area distribution, antecedent moisture, and snow melt. The common misnomer, "100 year flood or floodplain" implies a temporal element rather than a one in 100 random probability of the event.

(46) "Redevelopment " means **new construction, modification or** replacement of older development.

(47) "Responsible party" means any entity holding fee title to the property or other person contracted or obligated by other agreement to implement and maintain post-construction storm water BMPs.

(48) "Runoff" means storm water or precipitation including rain, snow or ice melt or similar water that moves on the land surface via sheet or channelized flow.

(49) "Separate storm sewer" means a conveyance or system of conveyances including roads with drainage systems, streets, catch basins, curbs, gutters, ditches, constructed channels or storm drains, which meets all of the following criteria:
(a) Is designed or used for collecting water or conveying runoff;
(b) Is not part of a combined sewer system;
(c) Is not draining to a storm water treatment device or system; and
(d) Discharges directly or indirectly to waters of the state.

(50) "Site" means the entire area included in the legal description of the land on which the land disturbing construction activity occurred.

(51) "Stop work order" means an order issued by the [administering authority] which requires that all construction activity on the site be stopped.

(52) "Storm water management plan" means a comprehensive plan designed to reduce the discharge of pollutants from storm water after the site has under gone final stabilization following completion of the construction activity.

(53) "Storm water management system plan" is a comprehensive plan designed to reduce the discharge of runoff and pollutants from hydrologic units on a regional or municipal scale.

(54) "Technical standard" means a document that specifies design, predicted performance and operation and maintenance specifications for a material, device or method.

(55) "Time of concentration" means the time period for the furthest runoff from the outlet of a watershed to contribute to flow at the watershed outlet.

(56) "Top of the channel" means an edge, or point on the landscape, landward from the ordinary high water mark of a surface water of the state, where the slope of the land begins to be less than 12% continually for at least 50 feet. If the slope of the land is 12% or less continually for the initial 50 feet, landward from the ordinary high water mark, the top of the channel is the ordinary high water mark.

(57) "TR-55" means the United States Department of Agriculture, Natural Resources Conservation Service (previously Soil Conservation Service), Urban Hydrology for Small Watersheds, Second Edition, Technical Release 55, June 1986.

(58) "Type II distribution" means a rainfall type curve as established in the "United States Department of Agriculture, Soil Conservation Service, Technical Paper 149, published 1973". The Type II curve is applicable to all of Wisconsin and represents the most intense storm pattern.

(59) "Waters of the state" has the meaning given in s. 281.01 (18), Wis. Stats.

(60) Water quality management means the stromwater standards and duties established under the Clean Water Act, 33 U.S.C. 1251 et. seq., parallel state law regulating the discharge of pollutants, and implementing regulations.

(61) Water quantity management means stormwater duties and practices to abate peaks flood flows during regional storm events pursuant to Chapter 13 of the Milwaukee Metropolitan Sewerage District rules as implemented and enforced by this municipality.

S.06 TECHNICAL STANDARDS

The following methods shall be used in designing the water quality, peak flow shaving and infiltration components of storm water practices needed to meet the **requirements** of this ordinance:

(1) Technical standards identified, developed or disseminated by the Wisconsin Department of Natural Resources under subchapter V of chapter NR 151, Wis. Adm. Code.

(2) Where technical standards have not been identified or developed by the Wisconsin Department of Natural Resources, other technical standards may be used provided that the methods have been approved by the [administering authority].

(3) The most recent rainfall data available from the Southeastern Wisconsin Regional Planning Commission or more protective data shall be the basis for the analyses required by this ordinance.

S.07 PERFORMANCE STANDARDS

(1) RESPONSIBLE PARTY. The responsible party shall implement a post-construction storm water management plan that incorporates the requirements of this section.

(2) PLAN. A written storm water **quality and quantity** management plan in accordance with S.09 shall be developed and implemented for each post-construction site.

(3) REQUIREMENTS. The **water quality** plan required under sub. (2) shall include the following:

(a) TOTAL SUSPENDED SOLIDS. BMPs shall be designed, installed and maintained to control total suspended solids carried in runoff from the post-construction site as follows:

1. For new development, by design, reduce to the maximum extent practicable, the total suspended solids load by 80%, based on the average annual rainfall, as compared to no runoff management controls. No person shall be required to exceed an 80% total suspended solids reduction to meet the requirements of this subdivision.

2. For redevelopment, by design, reduce to the maximum extent practicable, the total suspended solids load by 40%, based on the average annual rainfall, as compared to no runoff management controls. No person shall be required to exceed a 40% total suspended solids reduction to meet the requirements of this subdivision.

3. For in-fill development under 5 acres that occurs within 10 years after the effective date of this rule [revisor insert date], by design, reduce to the maximum extent practicable, the total suspended solids load by 40%, based on an average annual rainfall, as compared to no runoff management controls. No person shall be required to exceed a 40% total suspended solids reduction to meet the requirements of this subdivision.

4. For in-fill development that occurs 10 or more years after the effective date of this rule [revisor insert date], by design, reduce to the maximum extent practicable, the total suspended solids load by 80%, based on an average annual rainfall, as compared to no runoff management controls. No person shall be required to exceed an 80% total suspended solids reduction to meet the requirements of this subdivision.

5. Notwithstanding subds. 1. to 4., if the design cannot achieve the applicable total suspended solids reduction specified, the storm water management plan shall include a written and site-specific explanation why that level of reduction is not attained and the total suspended solids load shall be reduced to the maximum extent practicable.

Note: *Pollutant loading models such as SLAMM, P8 or equivalent methodology may be used to evaluate the efficiency of the design in reducing total suspended solids.*

(b) Water Quantity and Management of Peak Runoff

1. BMPS shall manage the volume, timing, and peak flow rate of runoff to prevent increases in the *regional flood* and stream bank erosion rates.

2. These BMPs may be implemented on either a watershed basis or an individual site basis.

3. When implemented on a watershed basis, the BMPs implemented at a particular site shall comply with the findings of the relevant local or regional storm water management plan, rather than subd. 4 and 5.

4(i) For the 50%/2-year, 24-hour design storm, BMPs shall be **designed** to **either:** maintain or reduce the peak runoff discharge rates, to the maximum extent practicable, as compared to pre-development conditions **or achieve a maximum runoff release rate of 0.15 cubic feet per second per acre, whichever is more stringent.**

(ii). Pre-development conditions shall assume "good hydrologic conditions" for appropriate land covers as identified in TR-55 or an equivalent methodology. The meaning of "hydrologic soil group" and "runoff curve number" are as determined in TR-55. However, when pre-development land cover is cropland, rather than using TR-55 values for cropland, the runoff curve numbers in Table 1 shall be used.

Table 1 – Maximum Pre-Development Runoff Curve Numbers for Cropland Areas				
Hydrologic Soil Group	A	B	C	D
Runoff Curve Number	56	70	79	83

5. For the 1%/100-year, 24-hour design storm, BMPs shall be designed to achieve a runoff release rate that is less than or equal to either:

(i) 0.5 [or a more stringent value] cubic feet per second per acre or

(ii) A rate determined for the individual site that distributes runoff over the critical time sufficient to comply with subd. 1.

Note: §13.11(3)(b)(2), MMSD Rules, permits an individual site exemption from the 0.5 cfs release rate if an analysis shows that the runoff will be distributed over the critical time (a defined term) so as not to reduce the level of protection downstream.

(c) INFILTRATION. BMPs shall be designed, installed, and maintained to infiltrate runoff to the maximum extent practicable in accordance with the following, except as provided in subd. 5 through 8.

1. For residential developments one of the following shall be met:

a. Infiltrate sufficient runoff volume so that the post-development infiltration volume shall be at least of the pre-development infiltration volume, based on an average annual rainfall. However, when designing

appropriate infiltration systems to meet this requirement, no more than 1% of the project site is required as an effective infiltration area.

b. Infiltrate 25% of the post-development runoff from the 2 year - 24 hour design storm with a type II distribution. Separate curve numbers for pervious and impervious surfaces shall be used to calculate runoff volumes and not composite curve numbers as defined in TR-55. However, when designing appropriate infiltration systems to meet this requirement, no more than 1% of the project site is required as an effective infiltration area.

2. For non-residential development, including commercial, industrial and institutional development, one of the following shall be met:

a. Infiltrate sufficient runoff volume so that the post-development infiltration volume shall be at least 60% of the pre-development infiltration volume, based on an average annual rainfall. However, when designing appropriate infiltration systems to meet this requirement, no more than 2% of the project site is required as an effective infiltration area.

b. Infiltrate 10% of the runoff from the 2 year - 24 hour design storm with a type II distribution. Separate curve numbers for pervious and impervious surfaces shall be used to calculate runoff volumes, and not composite curve numbers as defined in TR-55. However, when designing appropriate infiltration systems to meet this requirement, no more than 2% of the project site is required as an effective infiltration area.

3. Pre-development condition shall be the same as in par. (b).

***Note**: A model that calculates runoff volume, such as SLAMM, P8, or an equivalent methodology may be used.*

4. Before infiltrating runoff, pretreatment shall be required for parking lot runoff and for runoff from new road construction in commercial, industrial and institutional areas that will enter an infiltration system. The pretreatment shall be designed to protect the infiltration system from clogging prior to scheduled maintenance and to protect groundwater quality in accordance with subd. 8. Pretreatment options may include, but are not limited to, oil/grease separation, sedimentation, biofiltration, filtration, swales or filter strips.

***Note**: To achieve the infiltration requirement for the parking lots or roads, maximum extent practicable should not be interpreted to require significant topography changes that create an excessive financial burden. To minimize potential groundwater impacts, it is desirable to infiltrate the cleanest runoff. To achieve this, a design may propose greater infiltration of runoff*

from low pollutant sources such as roofs, and less from higher pollutant source areas such as parking lots.

5. Infiltration Exclusions. The runoff from the following areas are prohibited from meeting the requirements of this paragraph:

    a. Areas associated with tier 1 industrial facilities identified in s. NR 216.21(2)(a), Wis. Adm. Code, including storage, loading, rooftop and parking.

    b. Storage and loading areas of tier 2 industrial facilities identified in s. NR 216.21(2)(b), Wis. Adm. Code.

***Note**: Runoff from tier 2 parking and rooftop areas may be infiltrated but may require pretreatment.*

    c. Fueling and vehicle maintenance areas.

    d. Areas within 1000 feet upgradient or within 100 feet downgradient of karst features.

    e. Areas with less than 3 feet separation distance from the bottom of the infiltration system to the elevation of seasonal high groundwater or the top of bedrock, except this subd. 5.e. does not prohibit infiltration of roof runoff.

    f. Areas with runoff from industrial, commercial and institutional parking lots and roads and residential arterial roads with less than 5 feet separation distance from the bottom of the infiltration system to the elevation of seasonal high groundwater or the top of bedrock.

    g. Areas within 400 feet of a community water system well as specified in s. NR 811.16(4), Wis. Adm. Code, or within 100 feet of a private well as specified in s. NR 812.08(4), Wis. Adm. Code, for runoff infiltrated from commercial, industrial and institutional land uses or regional devices for residential development.

    h. Areas where contaminants of concern, as defined in s. NR 720.03(2), Wis. Adm. Code are present in the soil through which infiltration will occur.

    i. Any area where the soil does not exhibit one of the following soil characteristics between the bottom of the infiltration system and the seasonal high groundwater and top of bedrock: at least a 3-foot soil layer with 20% fines or greater; or at least a 5-foot soil layer with 10 percent fines or greater. This does not apply where the soil medium

within the infiltration system provides an equivalent level of protection. This subd. 5.i. does not prohibit infiltration of roof runoff.

Note: *The areas listed in subd. 5 are prohibited from infiltrating runoff due to the potential for groundwater contamination.*

6. Infiltration Exemptions. The following are not required to meet the requirements of this paragraph:
   a. Areas where the infiltration rate of the soil is less than 0.6 inches/hour measured at the site.
   b. Parking areas and access roads less than 5,000 square feet for commercial and industrial development.
   c. Redevelopment post-construction sites.
   d. In-fill development areas less than 5 acres.
   e. Infiltration areas during periods when the soil on the site is frozen.
   f. Roads in commercial, industrial and institutional land uses, and arterial residential roads.

7. a. Infiltration systems designed in accordance with this paragraph shall, to the extent technically and economically feasible, minimize the level of pollutants infiltrating to groundwater and shall maintain compliance with the preventive action limit at a point of standards application in accordance with ch. NR 140, Wis. Adm. Code. However, if site specific information indicates that compliance with a preventive action limit is not achievable, the infiltration BMP may not be installed or shall be modified to prevent infiltration to the maximum extent practicable.

   b. Notwithstanding par. a., the discharge from BMPs shall remain below the enforcement standard at the point of standards application.

(d) PROTECTIVE AREAS

1. "Protective area" means an area of land that commences at the top of the channel of lakes, streams and rivers, or at the delineated boundary of wetlands, and that is the greatest of the following widths, as measured horizontally from the top of the channel or delineated wetland boundary to the closest impervious surface. However, in this paragraph, "protective area" does not include any area of land adjacent to any stream enclosed within a pipe or culvert, such that runoff cannot enter the enclosure at this location.

   a. For outstanding resource waters and exceptional resource waters, and for wetlands in areas of special natural resource interest as specified in s. NR 103.04, 75 feet.

b. For perennial and intermittent streams identified on a United States geological survey 7.5-minute series topographic map, or a county soil survey map, whichever is more current, 50 feet.

c. For lakes, 50 feet.

d. For highly susceptible wetlands, 50 feet. Highly susceptible wetlands include the following types: fens, sedge meadows, bogs, low prairies, conifer swamps, shrub swamps, other forested wetlands, fresh wet meadows, shallow marshes, deep marshes and seasonally flooded basins. Wetland boundary delineations shall be made in accordance with s. NR 103.08(1m). This paragraph does not apply to wetlands that have been completely filled in accordance with all applicable state and federal regulations. The protective area for wetlands that have been partially filled in accordance with all applicable state and federal regulations shall be measured from the wetland boundary delineation after fill has been placed.

e. For less susceptible wetlands, 10 percent of the average wetland width, but no less than 10 feet nor more than 30 feet. Less susceptible wetlands include degraded wetlands dominated by invasive species such as reed canary grass.

f. In subd. 1.a., d. and e., determinations of the extent of the protective area adjacent to wetlands shall be made on the basis of the sensitivity and runoff susceptibility of the wetland in accordance with the standards and criteria in s. NR 103.03.

g. For concentrated flow channels with drainage areas greater than 130 acres, 10 feet.

2. This paragraph applies to post-construction sites located within a protective area, except those areas exempted pursuant to subd. 4.

3. The following requirements shall be met:

a. Impervious surfaces shall be kept out of the protective area to the maximum extent practicable. The storm water management plan shall contain a written site-specific explanation for any parts of the protective area that are disturbed during construction.

b. Where land disturbing construction activity occurs within a protective area, and where no impervious surface is present, adequate sod or self-sustaining vegetative cover of 70% or greater shall be established and maintained. The adequate sod or self-sustaining vegetative cover shall be sufficient to provide for bank stability, maintenance of fish habitat

and filtering of pollutants from upslope overland flow areas under sheet flow conditions. Non-vegetative materials, such as rock riprap, may be employed on the bank as necessary to prevent erosion, such as on steep slopes or where high velocity flows occur.

Note: *It is recommended that seeding of non-aggressive vegetative cover be used in the protective areas. Vegetation that is flood and drought tolerant and can provide long-term bank stability because of an extensive root system is preferable. Vegetative cover can be measured using the line transect method described in the University of Wisconsin Extension publication number A3533, titled "Estimating Residue Using the Line Transect Method".*

c. Best management practices such as filter strips, swales, or wet detention basins, that are designed to control pollutants from non-point sources may be located in the protective area.

Note: *Other regulations, such as ch. 30, Wis. Stats., and chs. NR 103, 115, 116 and 117, Wis. Adm. Code, and their associated review and approval process may apply in the protective area.*

4. This paragraph does not apply to:

a. Redevelopment post-construction sites.

b. In-fill development areas less than 5 acres.

c. Structures that cross or access surface waters such as boat landings, bridges and culverts.

d. Structures constructed in accordance with s. 59.692(1v), Wis. Stats.

e. Post-construction sites from which runoff does not enter the surface water, except to the extent that vegetative ground cover is necessary to maintain bank stability.

Note: *A vegetated protective area to filter runoff pollutants from post-construction sites described in subd. 4.e. is not necessary since runoff is not entering the surface water at that location. Other practices, necessary to meet the requirements of this section, such as a swale or basin, will need to be designed and implemented to reduce runoff pollutants before the runoff enters a surface water of the state.*

(e) FUELING AND VEHICLE MAINTENANCE AREAS. Fueling and vehicle maintenance areas shall, to the maximum extent practicable, have BMPs designed, installed and maintained to reduce petroleum within runoff, such that the runoff that enters waters of the state contains no visible petroleum sheen.

Note: *A combination of the following BMPs may be used: oil and grease separators, canopies, petroleum spill cleanup materials, or any other structural or non-structural method of*

preventing or treating petroleum in runoff.

[OPTIONAL] (f) SWALE TREATMENT FOR TRANSPORTATION FACILITIES

1. Applicability. Except as provided in subd. 2., transportation facilities that use swales for runoff conveyance and pollutant removal meet all of the requirements of this section, if the swales are designed to the maximum extent practicable to do all of the following:

    a. Be vegetated. However, where appropriate, non-vegetative measures may be employed to prevent erosion or provide for runoff treatment, such as rock riprap stabilization or check dams.

Note: *It is preferred that tall and dense vegetation be maintained within the swale due to its greater effectiveness at enhancing runoff pollutant removal.*

    b. Carry runoff through a swale for 200 feet or more in length that is designed with a flow velocity no greater than 1.5 feet per second based on a 2-year, 24-hour design storm. If a swale of 200 feet in length cannot be designed with a flow velocity of 1.5 feet per second or less, then the flow velocity shall be reduced to the maximum extent practicable.

Note: *Check dams may be included in the swale design to slow runoff flows and improve pollutant removal. Transportation facilities with continuous features such as curb and gutter, sidewalks or parking lanes do not comply with the design requirements of this paragraph. However, a limited amount of structural measures such as curb and gutter may be allowed as necessary to account for other concerns such as human safety or resource protection.*

2. Exemptions. The [administering authority] may, consistent with water quality standards, require other provisions of this section be met on a transportation facility with an average daily travel of vehicles greater than 2500 and where the initial surface water of the state that the runoff directly enters is any of the following:
    a. An outstanding resource water.
    b. An exceptional resource water.
    c. Waters listed in s. 303(d) of the federal clean water act that are identified as impaired in whole or in part, due to nonpoint source impacts.
    d. Waters where targeted performance standards are developed under s. NR 151.004, Wis. Adm. Code, to meet water quality standards.

Note: *The Department of Natural Resource's regional storm water staff can determine if additional BMPs, beyond a water quality swale, are needed under this paragraph.*

(4) GENERAL CONSIDERATIONS FOR ON-SITE AND OFF-SITE STORM WATER MANAGEMENT MEASURES. The following considerations shall be observed in managing runoff:

(a) Natural topography and land cover features such as natural swales, natural depressions, native soil infiltrating capacity, and natural groundwater recharge areas shall be preserved and used, to the extent possible, to meet the requirements of this section.

(b) Emergency overland flow for all storm water facilities shall be provided to prevent exceeding the safe capacity of downstream drainage facilities and prevent endangerment of downstream property or public safety.

(c) BMPs for water quantity management shall utilize the following techniques, in order of preference:

1. Preservation of the natural features of development sites, including natural storage and infiltration characteristics;

2. Preservation of existing natural streams, channels, and drainage ways;

3. Minimization of new impervious surfaces;

4. Conveyance of storm water in open vegetated channels;

5. Construction of structures that provide both quantity and quality control, with structures serving multiple sites being preferable to structures serving individual sites; and

6. Construction of structures that provide only quantity control, with structures serving multiple sites being preferable to structures serving individual sites.

(5) LOCATION AND REGIONAL TREATMENT OPTION

(a) The BMPs may be located on-site or off-site as part of a regional storm water device, practice or system **within the same watershed.**

(b) Runoff within a non-navigable drainage way that flows into a BMP, such as a wet pond, is not required to meet **water quality** performance standards **unless designed to provide treatment.**

***Note**: This regional treatment option does not supersede any other federal, state or local regulation of post-construction runoff, such as chs. NR 103 and 30, Wis. Stats.*

(c) The discharge of runoff from a BMP, such as a wet pond, or after a series of such BMPs is subject to this chapter.

(d) The [administering authority] may approve off-site management measures provided that all of the following conditions are met:

1. The [administrating authority] determines that the post-construction runoff is covered by a storm water management system plan that is approved by the [name of municipality] and that contains management requirements consistent with the purpose and intent of this ordinance.

2. The off-site facility meets all of the following conditions:

   a. The facility is in place.

   b. The facility is designed and adequately sized to provide a level of storm water control equal to or greater than that which would be afforded by on-site practices meeting the performance standards of this ordinance.

   c. The facility has a legally obligated entity responsible for its long-term operation and maintenance.

(e) Where a regional treatment option exists such that the [administering authority] exempts the applicant from all or part of the minimum on-site storm water management requirements, the applicant shall be required to pay a fee in an amount determined in negotiation with the [administering authority]. In determining the fee for post-construction runoff, the [administering authority] shall consider an equitable distribution of the cost for land, engineering design, construction, and maintenance of the regional treatment option.

(5) ALTERNATE REQUIREMENTS. The [administering authority] may establish storm water management requirements more stringent than those set forth in this section if the [administering authority] determines that an added level of protection is needed to protect sensitive resources.

(6) **Credit for Removal of Impervious Surfaces.**

(a) Same Site Credit. The administering authority may use the removal of pavement, covered structures or other impervious surfaces at the same property to calculate the net post construction impervious acreage and corresponding water quantity management duties. Credit may equal, but not be larger than the acreage of impervious surfaces removed when runoff release rates and detention are the best management practices utilized at the site. When best management practices with a higher order of preference are utilized in lieu of detention, equivalent credit may be granted as determined by the administering authority with the concurrence of the MMSD. Credit for reducing impervious surfaces at a site, not utilized by the development on the site, belongs to the administering authority and may be banked for allocation to other development within the watershed under subsection (b).

(b) Dispersed Site in Same Watershed Credit. The administering authority may bank the removal of impervious surfaces, which individually must be one half acre or more, within the same watershed, where the volume, timing and peak flow of runoff will be distributed over the critical time sufficient to assure the level of protection provided by MMSD flood abatement projects will not be reduced. The administering authority may allocate banked credit to promote a policy of smart growth. The total acreage banked or allocated, or both, shall be reported, by watershed or sub-watershed, annually to the MMSD for concurrence.

Note: Section 1.13, Wis. Stats.,(a/k/a Smart Growth) outlines 14 comprehensive Planning Goals which, collectively or individually, would seem to support any allocation of credits a local government thought to be in its best interest.

S.08 PERMITTING REQUIREMENTS, PROCEDURES AND FEES

(1) PERMIT REQUIRED. No responsible party may undertake a land disturbing construction activity without receiving a post-construction runoff permit from the [administering authority] prior to commencing the proposed activity.

(2) PERMIT APPLICATION AND FEES. Any responsible party desiring a permit shall submit to the [administering authority] a permit application made on a form provided by the [administering authority] for that purpose.

(a) Unless specifically excepted, a permit application must be accompanied by a storm water management plan, a maintenance agreement and a non-refundable permit administration fee.

(b) The storm water management plan shall be prepared to meet the requirements of SS.07 and 09, the maintenance agreement shall be prepared to meet the requirements of S.10, the financial guarantee shall meet the requirements of S.11, and fees shall be those established by the [governing body] as set forth in S.12.

(3) REVIEW AND APPROVAL OF PERMIT APPLICATION. The [administering authority] shall review any permit application that is submitted with a storm water management plan, maintenance agreement, and the required fee, as follows:

(a) Within [number] business days of the receipt of a complete permit application, including all items as required by sub. (2), the [administering authority] shall inform the applicant whether the application, plan and maintenance agreement are approved or disapproved based on the requirements of this ordinance.

(b) If the storm water permit application, plan and maintenance agreement are approved, or if an agreed upon payment of fees in lieu of storm water management practices is made, the [administering authority] shall issue the permit.

(c) If the storm water permit application, plan or maintenance agreement is disapproved, the [administering authority] shall detail in writing the reasons for disapproval.

(d) The [administering authority] may request additional information from the applicant. If additional information is submitted, the [administering authority] shall have [number] business days from the date the additional information is received to inform the applicant that the plan and maintenance agreement are either approved or disapproved.

(e) Failure by the [administering authority] to inform the permit applicant of a decision within [number] business days of a required submittal shall be deemed an approval of the submittal and the applicant may proceed as if a permit had been issued.

(4) PERMIT REQUIREMENTS. All permits issued under this ordinance shall be subject to the following conditions, and holders of permits issued under this ordinance shall be deemed to have accepted these conditions. The [administering authority] may suspend or revoke a permit for violation of a permit condition, following written notification of the responsible party. An action by the [administering authority] to suspend or revoke this permit may be appealed in accordance with S.14.

(a) The responsible party shall design and install all structural or **identify** non-structural storm water management measures, **or both,** in accordance with the approved storm water management plan and this permit.

(b) The responsible party shall notify the [administering authority] at least [number] business days before commencing any work in conjunction with the storm water management plan, and within [number] business days upon completion of the storm water management practices. If required as a special condition under sub. (5), the responsible party shall make additional notification according to a schedule set forth by the [administering authority] so that practice installations can be inspected during construction.

(c) Practice installations required as part of this ordinance shall be certified "as built". Completed storm water management practices must pass a final inspection by the [administering authority] or its designee to determine if they are in accordance with the approved storm water management plan and ordinance. The [administering authority] or its designee shall notify the responsible party in writing of any changes required in such practices to bring them into compliance with the conditions of this permit.
Note: Certification by a P.E. may be an additional cost without benefit in many instances. Other non P.E. professionals, e.g., landscape architects or general contractors, appear to provide adequate assurances.

(d) The responsible party shall maintain all storm water management practices until the responsibility is transferred to the [governing body], or subsequent private owners as specified in the approved maintenance agreement.

(e) The responsible party authorizes the [administering authority] to perform any work or operations necessary to bring storm water management measures into conformance with the approved storm water management plan, and consents to a special assessment or charge against the property as authorized under subch. VII of ch. 66, Wis. Stats., or to charging such costs against the financial guarantee posted under S.11.

(f) If so directed by the [administering authority], the responsible party shall repair at the responsible party's own expense all damage to adjoining municipal facilities and drainage ways caused by runoff, where such damage is caused by activities that are not in compliance with the approved storm water management plan.

(g) The responsible party shall permit property access to the [administering authority] or its designee for the purpose of inspecting the property for compliance with the approved storm water management plan and this permit.

(h) Where site development or redevelopment involves changes in direction, increases in the peak rate or the total volume of runoff, the [administering authority] may require the responsible party to make appropriate legal arrangements with affected property owners concerning the prevention of endangerment to property or public safety.

(5) PERMIT CONDITIONS. Permits issued under this subsection may include **reasonable and necessary** conditions established by [administering authority] in addition to the requirements needed to meet the performance standards in S.07 or a financial guarantee as provided for in S.11.

Note: "Reasonable and necessary" is the §283.63(1), Wis. Stats., standard for permit conditions and duties in Clean Water Act permits.

(6) PERMIT DURATION. Permits issued under this section shall be valid from the date of issuance through the date the [administering authority] notifies the responsible party that all storm water management practices have passed the final inspection required under sub. (4)(c).

S.09 STORM WATER MANAGEMENT PLAN

(1) PLAN REQUIREMENTS. The storm water management plan required under S.08 (2) shall contain at a minimum the following information:

(a) Name, address, and telephone number for the following or their designees: landowner; developer; project engineer for practice design and certification; person(s) responsible for installation of storm water management practices; and person(s) responsible for maintenance of storm water management practices prior to the transfer, if any, of maintenance responsibility to another party.

(b) A proper legal description of the property proposed to be developed, referenced to the U.S. Public Land Survey system or to block and lot numbers within a recorded land subdivision plat.

(c) Pre-development site conditions, including:

1. One or more site maps at a scale of not less than 1 inch equals [number] feet. The site maps shall show the following: site location and legal property description; predominant soil types and hydrologic soil groups; existing cover type and condition; topographic contours of the site at a scale not to exceed [number] feet; topography and drainage network including enough of the contiguous properties to show runoff patterns onto, through, and from the site; watercourses that may affect or be affected by runoff from the site; flow path and direction for all storm water conveyance sections; watershed boundaries used in hydrology determinations to show compliance with performance standards; lakes, streams, wetlands, channels, ditches, and other watercourses on and immediately adjacent to the site; limits of the **regional flood (the 1% probability storm event)** floodplain; location of wells and wellhead protection areas covering the project area and delineated pursuant to s. NR 811.16, Wis. Adm. Code.

2. Hydrology and pollutant loading computations as needed to show compliance with performance standards. All major assumptions used in developing input parameters shall be clearly stated. The geographic areas used in making the calculations shall be clearly cross-referenced to the required map(s).

(d) Post-development site conditions, including:

1. Explanation of the provisions to preserve and use natural topography and land cover features to minimize changes in peak flow runoff rates and volumes to surface waters and wetlands.

2. Explanation of any restrictions on storm water management measures in the development area imposed by wellhead protection plans and ordinances.

3. One or more site maps at a scale of not less than 1 inch equals [number] feet showing the following: post-construction pervious areas including vegetative cover type and condition; impervious surfaces including all buildings, structures, and pavement; post-construction topographic contours of the site at a scale not to exceed [number] feet; post-construction drainage network including enough of the contiguous properties to show runoff patterns onto, through, and from the site; locations and dimensions of drainage easements; locations of maintenance easements specified in the maintenance agreement; flow path and direction for all storm water conveyance sections; location and type of all storm water management conveyance and treatment practices, including the on-site and off-site tributary drainage area; location and type of

conveyance system that will carry runoff from the drainage and treatment practices to the nearest adequate outlet such as a curbed street, storm drain, or natural drainage way; watershed boundaries used in hydrology and pollutant loading calculations and any changes to lakes, streams, wetlands, channels, ditches, and other watercourses on and immediately adjacent to the site.

4. Hydrology and pollutant loading computations as needed to show compliance with performance standards. The computations shall be made for each discharge point in the development, and the geographic areas used in making the calculations shall be clearly cross-referenced to the required map(s).

5. Results of investigations of soils and groundwater required for the placement and design of storm water management measures. Detailed drawings including cross-sections and profiles of all permanent storm water conveyance and treatment practices.

(e) A description and installation schedule for the storm water management practices needed to meet the performance standards in S.07.

(f) A maintenance plan developed for the life of each storm water management practice including the required maintenance activities and maintenance activity schedule.

(g) Cost estimates for the construction, operation, and maintenance of each storm water management practice.

(h) Other information requested in writing by the [administering authority] to determine compliance of the proposed storm water management measures with the provisions of this ordinance.

(i) All site investigations, plans, designs, computations, and drawings shall be certified by a [licensed professional engineer] to be prepared in accordance with accepted engineering practice and requirements of this ordinance.

(2) ALTERNATE REQUIREMENTS. The [administering authority] may prescribe alternative submittal requirements for applicants seeking an exemption to on-site storm water management performance standards under S.07(5).

S.10 MAINTENANCE AGREEMENT

(1) MAINTENANCE AGREEMENT REQUIRED. The maintenance agreement required under S.08 (2) for storm water management practices shall be an agreement between the [administering authority] and the responsible party to provide for maintenance of storm water practices beyond the duration period of this permit. The maintenance agreement shall be filed with the County Register of Deeds as a property deed restriction so that it is binding upon all subsequent owners of the land served by the storm water management practices.

(2) AGREEMENT PROVISIONS. The maintenance agreement shall contain the following information and provisions and be consistent with the maintenance plan required by S.09(1)(f):

(a) Identification of the storm water facilities and designation of the drainage area served by the facilities.

(b) A schedule for regular maintenance of each aspect of the storm water management system consistent with the storm water management plan required under S.08 (2).

(c) Identification of the responsible party(s), organization or city, county, town or village responsible for long term maintenance of the storm water management practices identified in the storm water management plan required under S.08 (2).

(d) Requirement that the responsible party(s), organization, or city, county, town or village shall maintain storm water management practices in accordance with the schedule included in par. (b).

(e) Authorization for the [administering authority], **its designee and the Milwaukee Metropolitan Sewerage District** to access the property to conduct inspections of storm water management practices as necessary to ascertain that the practices are being maintained and operated in accordance with the agreement.

(f) Agreement that the party designated under par. (c), as responsible for long term maintenance of the storm water management practices, shall be notified by the [administering authority] of maintenance problems which require correction. The specified corrective actions shall be undertaken within a reasonable time frame as set by the [administering authority].

(g) Authorization of the [administering authority] to perform the corrected actions identified in the inspection report if the responsible party designated under par. (c) does not make the required corrections in the specified time period. The [administering authority] shall enter the amount due on the tax rolls and collect the money as a special charge against the property pursuant to subch. VII of ch. 66, Wis. Stats.

S.11 FINANCIAL GUARANTEE

(1) ESTABLISHMENT OF THE GUARANTEE. The [administering authority] may require the submittal of a financial guarantee, the form and type of which shall be acceptable to the [administering authority]. The financial guarantee shall be in an amount determined by the [administering authority] to be the estimated cost of construction and the estimated cost of maintenance of the storm water management practices during the period which the designated party in the maintenance agreement has maintenance responsibility. The financial guarantee shall give the [administering authority] the authorization to use the funds to complete the storm water management practices if the responsible party defaults or does not

properly implement the approved storm water management plan, upon written notice to the responsible party by the administering authority that the requirements of this ordinance have not been met.

(2) CONDITIONS FOR RELEASE. Conditions for the release of the financial guarantee are as follows:

(a) The [administering authority] shall release the portion of the financial guarantee established under this section, less any costs incurred by the [administering authority] to complete installation of practices, upon submission of "as built plans" by a licensed professional engineer. The [administering authority] may make provisions for a partial pro-rata release of the financial guarantee based on the completion of various development stages.

(b) The [administering authority] shall release the portion of the financial guarantee established under this section to assure maintenance of storm water practices, less any costs incurred by the [administering authority], at such time that the responsibility for practice maintenance is passed on to another entity via an approved maintenance agreement.

S.12 FEE SCHEDULE

The fees referred to in other sections of this ordinance shall be established by the [administering authority] and may from time to time be modified by resolution. A schedule of the fees established by the [administering authority] shall be available for review in [location].

S.13 ENFORCEMENT

(1) Any land disturbing construction activity or post-construction runoff initiated after the effective date of this ordinance by any person subject to the ordinance provisions shall be deemed a violation unless conducted in accordance with the requirements of this ordinance.

(2) The [administering authority] shall notify the responsible party of any non-complying land disturbing construction activity or post-construction runoff. The notice shall describe the nature of the violation, remedial actions needed, a schedule for remedial action, or additional enforcement action which may be taken. **Any technique that effectively provides actual and verifiable notice may be used.**

(3) If the violations are likely to result in damage to properties, public facilities, or waters of the state, the [administering authority] may enter the land and take **corrective** actions necessary to prevent such damage. The costs incurred by the [administering authority] plus interest and legal costs shall be paid by the responsible party.

(4) **If the [administering authority] determines that any person is in violation of this ordinance or a stormwater permit, the [authority] may issue a notice of violation, a stop work order, a cease and desist order, or revoke the permit, or refer the noncompliance**

to the [village or city attorney] for civil enforcement, penalties, injunctive orders or other appropriate relief.

(5) **Every violation of this ordinance is a public nuisance.** Any person **who violates** this ordinance shall be subject to a forfeiture of not less than $_____ dollars or more than $_____ dollars per offense, together with the costs of prosecution. Each day each violation continues shall constitute a separate offense. ***Note: §283.91(2) provides penalties of not less than $10.00/day/violation and not more than $10,000/day/violation.***

Note: *Injunctive orders are authorized pursuant to s. 59.69(11), 61.35, or 62.23(8), Wis. Stats., for counties, villages and towns with village powers, and cities respectively.*

(6) When the [administering authority] determines that the holder of a permit issued pursuant to this ordinance has failed to follow practices, or has failed to comply with schedules in a storm water management plan, the [administering authority] or a party designated by the [administering authority] may enter upon the land and perform the work or other operations necessary to bring the condition of said lands into conformance with requirements of the approved plan. The [administering authority] shall keep a detailed accounting of the costs and expenses of performing this work. These costs and expenses shall be deducted from any financial security posted pursuant to S.11 of this ordinance. Where such a security has not been established, or where such a security is insufficient to cover these costs, the costs and expenses shall be entered on the tax roll as a special charge against the property and collected with any other taxes levied thereon for the year in which the work is completed.

S.14 APPEALS

MMSD Comment - Current Zoning Appeals law provides all process due. The adopting resolution should indicate that the municipality is utilizing the "out-out" election provided by §68.13, Wis. Stat., and therefore stormwater appeals will not be governed by Chapter 68, Wis. Stats., the Municipal Administrative procedures Act. See, *Tee & Bee v. West Allis*, 214 Wis.2d 194, 571 N.W.2d 438 (Ct. App. 1997) (City failed to *opt out* of Chapter 68).

(1) BOARD OF [**Zoning** APPEALS]. The board of [**Zoning** appeals], created pursuant to section [number] of the [name of municipality] ordinances pursuant to s. [59.694, or 60.65 or 61.354(4)(b) or 62.23(7)(e)], Wis. Stats, shall hear and decide appeals where it is alleged that there is error in any order, decision or determination made by the [administering authority] in administering stormwater quality or quantity duties arising from development. The Board may authorize variances that are not contrary to the public interest, and where owing to special conditions unique to the property, a literal enforcement would be an unnecessary hardship.

(2) WHO MAY APPEAL. Appeals to the board of [Zoning appeals] may be taken by any aggrieved person or by an officer, department, board, or bureau of the [name of municipality] affected by any decision of the [administering authority].

STATE OF WISCONSIN : MILWAUKEE COUNTY : VILLAGE OF WHITEFISH BAY

ORDINANCE NO:

An Ordinance to Create Section 13.57 of the Municipal Code
With Regard to Stormwater Management Regulations

The Village Board of the Village of Whitefish Bay, Wisconsin do ordain as follows:

SECTION ONE: Sec. 13.57 of the Municipal Code is hereby created to read:

13.57 Stormwater Management Regulations

(1) Purpose and Intent of Section

(a) PURPOSE. The general purpose of this Section is to set forth stormwater requirements and criteria that will diminish the threats to public health, safety, welfare, and the aquatic environment due to runoff of stormwater from land development activity. Specific purposes are to:

1. Further the maintenance of safe and healthful conditions;

2. Prevent and control the adverse effects of stormwater, prevent and control soil erosion, prevent and control water pollution, protect spawning grounds, fish, and aquatic life;

3. Assure the safe capacity of existing drainage facilities and receiving water bodies; prevent undue channel erosion; control increases in the scouring and transportation of particulate matter; prevent conditions that endanger downstream property; and

4. Control building sites, placement of structures, and land uses, and promote sound economic growth.

(b) INTENT. The intent of this Section is to manage the long-term, post-construction stormwater discharges from land development activities. Where such system plans have been developed and approved by the Village, it is the intent that all land development activities will include stormwater management measures that meet performance standards set forth in those approved plans. Where such stormwater management system plans have not been developed or approved, it is the intent of the Village that the generic stormwater management standards set forth be applied unless otherwise excepted by the Department of Public Works.

(2) Definitions.

(a) AGRICULTURAL means the planting, growing, cultivating, and harvesting of crops; growing and tending of gardens, and trees; harvesting of trees.

(b) CEASE AND DESIST ORDER means a court issued order to halt land developing activity that is being conducted without the required permit.

(c) COMMON PLAN OF DEVELOPMENT OR SALE means all lands included within the boundary of a certified survey or subdivision plat created for the purpose of development or sale of property where multiple separate and distinct land developing activity may take place at different times and on different schedules.

(d) DESIGN STORM means a hypothetical discrete rainstorm characterized by a specific duration, temporal distribution, rainfall intensity, return frequency, and total rainfall depth.

(e) DISCHARGE VOLUME means the quantity of runoff discharged from the land surface as the result of a rainfall event.

(f) FEE IN LIEU means a payment of money to the Village in place of meeting all or part of the stormwater performance standards required by this Section.

(g) FINANCIAL GUARANTEE means a performance bond, maintenance bond, surety bond, irrevocable letter of credit, or similar guarantees submitted to the Village by the permit holder to assure that requirements of this Section are carried out in compliance with the stormwater management plan.

(h) GROSS AGGREGATE AREA means the total area, in acres, of all land located within the property boundary containing the land development activity.

(i) GROUNDWATER ENFORCEMENT STANDARD means a numerical value expressing the concentration of a substance in groundwater which is adopted under Sec. 160.07 Wis. Stats. and Sec. NR 140. 10 or Sec. 160.09 Wis. Stats., and Sec. NR 140.12.

(j) GROUNDWATER PREVENTIVE ACTION LIMIT means a numerical value expressing the concentration of a substance in groundwater which is adopted under Sec. 160.15 Wis. Stats., and Sec. NR 140.10, 140.12, or 140.20.

(k) IMPERVIOUS SURFACE means a surface that releases the rainfall as surface runoff during a large portion of the design rainfall event. Rooftops, sidewalks, parking lots, and street surfaces are examples of impervious surfaces.

(l) INFILTRATION means the process by which rainfall or surface runoff percolates or penetrates into the underlying soil.

(m)LAND DEVELOPMENT ACTIVITY means any construction or re-development of buildings, roads, parking lots, paved and unpaved storage areas, and similar facilities, but not including agricultural activity.

(n) MAINTENANCE AGREEMENT means a legal document that is filed with the Milwaukee County Register of Deeds as a property deed restriction, and which provides for long-term maintenance of stormwater management practices.

(o) NON-STORM DISCHARGE means a discharge to the storm sewer system created by process other than stormwater runoff.

(p) NON-STRUCTURAL MEASURE means a practice, technique, or measure to reduce the volume, peak flow rate, or pollutants in stormwater that does not require the design or installation of fixed stormwater management facilities.

(q) OFF-SITE means located outside the property boundary described in the permit application for land development activity.

(r) OTHER THAN RESIDENTIAL DEVELOPMENT means development of the following land uses: commercial; industrial; government and institutional; recreation; transportation, communication, and utilities.

(s) ON-SITE means located within the property boundary described in the permit for the land development activity.

(t) PEAK FLOW DISCHARGE RATE means the maximum rate at which a unit volume of stormwater is discharged.

(u) PERVIOUS SURFACE means a surface that infiltrates rainfall during a large portion of the design rainfall event. Well-managed lawns, fields and woodlands are examples of pervious surfaces.

(v) POST-CONSTRUCTION STORMWATER DISCHARGE means any stormwater discharged from a site following the completion of land disturbing construction activity and final site stabilization.

(w) POST-DEVELOPMENT CONDITION means the extent and distribution of land cover types, anticipated to occur under conditions of full development that will influence stormwater runoff and infiltration.

(x) PRE-DEVELOPMENT CONDITION means the extent and distribution of land cover types present before the initiation of land development activity, assuming that all land uses prior to development activity are managed in an environmentally sound manner.

(y) PRE-TREATMENT means the treatment of stormwater prior to its discharge to the primary stormwater treatment practice in order to reduce pollutant loads to a level compatible with the capability of the primary practice.

(z) RESIDENTIAL DEVELOPMENT means that which is created to house people, including the residential dwellings as well as all attendant portions of the development including lawns, driveways, sidewalks, garages, and access streets. This type of development includes single family, multi-family, apartments, and trailer parks.

(aa) SITE RESTRICTION means any physical characteristic which limits the use of a stormwater best management practice as prescribed in the Wisconsin Storm Water Manual, Part 2: Technical Design Guidelines for Storm Water Best Management Practices.

(bb) STOP WORK ORDER means an order issued by the Building Inspector which that all construction activity on the site be stopped.

(cc) STORMWATER MANAGEMENT PLAN means a document that identifies what actions will be taken to reduce stormwater quantity and pollutant loads from land development activity to levels meeting the purpose and intent of this Section.

(dd) STORMWATER MANAGEMENT SYSTEM PLAN is a comprehensive plan developed to address stormwater drainage and non-point source pollution control problems on a watershed or sub-watershed basis, and which meets the purpose and intent of this Section.

(ee) STORMWATER RUNOFF means that portion of the precipitation falling during a rainfall event, or that portion of snowmelt, that runs off the surface of the land and into the natural or artificial conveyance or drainage network.

(ff) STRUCTURAL MEASURE means source area practices, conveyance measures, and end-of-pipe treatment that are designed to control

stormwater runoff pollutant loads, discharge volumes, and peak flow discharge rates.

(gg) VILLAGE PERSONNEL or AUTHORIZED PERSONNEL shall mean employees of the Village of Whitefish Bay or those agents authorized by the Village Board to implement these stormwater management regulations.

(hh) WATERS OF THE STATE means those portions of Lake Michigan and Lake Superior within the boundaries of Wisconsin, and all lakes, bays, rivers, streams, springs, ponds, wells, impounding reservoirs, marshes, watercourses, drainage systems and other surface water or groundwater, natural or artificial, public or private, within the state or its jurisdiction.

(3) Stormwater Management Plan and Facilities Required

(a) PLAN AND FACILITIES REQUIRED. No person shall proceed with any residential, commercial, industrial, or institutional land development or redevelopment, or with the land division of property without providing appropriate stormwater management facilities that adequately control stormwater runoff from such development or subdivided property. A site-specific stormwater management plan must be submitted and approved by the Village before any required new stormwater management facilities are constructed, unless exempted or waived pursuant to the provisions of this Section. An approved site-specific stormwater management plan is also required before an existing drainage system is relocated, deepened, widened, enlarged, filled, obstructed, or otherwise altered in preparation for land use development or land division of property. The plan must be submitted and approved before any land development is commenced or a land subdivision plat or certified survey map approved and recorded.

(4) Applicability.

(a) APPLICABILITY. This Section applies to land development activities that meet applicability criteria specified in this section. The Section also applies to land development activities that are smaller than the minimum applicability criteria if such activities are part of a larger common plan of development or sale that meets any of the following applicability criteria, even through multiple separate and distinct land development activities may take place a different times on different schedules:

1. Land development activity that involves and increase of one-half acre (21,780 square feet) or more of impervious surface;

2. Land development activity of any size that, in the opinion of the Department of Public Works is likely to result in stormwater runoff which exceeds the safe capacity of the existing drainage facilities or receiving

body of water, which causes undue channel erosion, which increases water pollution by scouring or the transportation of particulate matter or which endangers property or public safety.

(b) JURISDICTION. This Section applies to all lands and waters, and all land development activities within boundaries of the Village of Whitefish Bay.

(c) EXEMPTIONS. The following activities are exempt from stormwater management plan requirements:

1. Agricultural activities not associated with development or redevelopment.

2. Maintenance, alteration, use or improvement to an existing structure or construction activity which does not significantly change or affect the water quality, hydrologic and hydraulic characteristics of the surface water discharge;

3. Maintenance activities undertaken by any municipal, state or federal governmental agency.

4. Stormwater management facilities to be constructed or measures to be undertaken by the Village when the Village has determined that a stormwater management plan is not required.

5. Facilities, or portions thereof, for which a Special Exception is granted pursuant to Section 16.20 of the Zoning Code.

(5) Stormwater Management Standards.

(a) STORMWATER MANAGEMENT CRITERIA.

1. The site-specific stormwater management system plan required under the provisions of this Section shall be designed in accordance with good engineering practice. The specific methods to be used in the calculation of peak rates of discharge, volumes, and water quality conditions and of the hydraulic capacities of storage and conveyance facilities shall be left to the judgment of the professional engineer preparing the plan subject, however, to the approval of the Village.

2. The site-specific stormwater management system plan shall be designed such that natural topography and land cover features such as swales, natural depressions, native soil infiltrating capacity, and natural groundwater recharge areas shall be preserved and used to the extent practicable.

(b) STORMWATER DISCHARGE QUANTITY STANDARDS.

1. The conveyance and storage facilities incorporated into the site-specific stormwater management system plan required under this Section shall be designed as an integral part of complementary minor and major subsystem.

2. The minor subsystem shall be designed to avoid nuisance flooding of streets and yards and shall accommodate the peak rate of runoff from rainfall events up to and including the 10-year recurrence interval event. The rainfall intensity shall be determined based on appropriate times of concentration from relationships established and published by the Southeastern Wisconsin Regional Planning Commission.

3. The complementary major subsystem shall consist of the public streets and interconnected flow paths to the streets and from the streets to receiving streams and watercourses. The major system shall be designed to accommodate peak rates of discharge from rainfall events up to and including the 100-year recurrence interval event without inundation of exposed basements, building basement window wells, basement entryways, or the first floors of buildings, utilizing a one-foot freeboard.

4. Unless otherwise provided for, all land development activities subject to this Section shall establish on-site management practices to control the peak flow rates of stormwater discharged from the site. On-site management practices shall be used to meet the following minimum performance standards:

(c) PEAK FLOW DISCHARGE

1. The peak flow discharge rates of stormwater runoff under the post-development conditions shall be controlled and reduced as follows:

    a. 100-year post-development peak runoff discharge shall not exceed the lesser of the following:

        - 2-year pre-development peak runoff discharge,

        or

        - 0.5 cubic feet per second per acre (cfs),

        or

- maximum hydraulic capacity of existing downstream conveyance facilities as determined by the Village.

b. 50-year post-development peak runoff discharge shall not exceed 0.15 cfs per acre;

c. The design rainfall used for stormwater management pond design shall be the 2, 50, and 100-year recurrence interval, 24-hour duration events with a SCS TYPE II distribution; and

d. The area included in discharge limit calculations in the form of cfs/acre shall consist of the entire portion of the site draining to the discharge location under consideration.

2. If the land development site or the proposed stormwater management facility currently receives or is proposed to receive surface runoff originating from off-site tributary watershed areas, the stormwater management criteria shall only apply to the portion of the total runoff that originates from the land being developed.

3. The stormwater management pond shall fully contain the runoff from the tributary watershed area during the 100-year, 24-hour rainfall with a SCS TYPE II distribution under the post-development conditions. The tributary watershed area consists of all on-site and off-site areas draining to the pond.

4. Emergency overland flow for all stormwater facilities shall be provided to prevent exceeding the safe capacity of downstream drainage facilities and prevent endangerment of downstream property or public safety.

5. If surface runoff leaves the site at more than one location, discharge at each location must individually meet the standards set forth in this Section. The discharge comparisons shall be made at stormwater conveyance facilities (i.e., ditches, culverts, storm sewers, stormwater detention ponds, channels, streams, etc.) that are located immediately downstream of each discharge location of the land development site.

6. Impacts to the hydraulic performance of downstream conveyance or storage facilities shall be avoided. Where such changes are proposed, the impact of the proposal on the existing stormwater detention ponds shall be assessed using a methodology acceptable to the Village.

7. All stormwater runoff conveyance facilities within the boundaries of the property that is being developed shall be sized to adequately carry the

runoff from a 10-year recurrence interval rainfall of 0.5, 1, 6, or 12-hour duration, depending on the duration that results in the most critical peak runoff rate from the area under consideration. In some cases, less sophisticated computation methods such as the Rational Method may be used with prior written Village approval.

The following table provides the guidelines for the selection of the most critical design rainfall. In general, the smaller the watershed area, the shorter the critical design storm will be for a given ground cover condition. Once determined, the critical design rainfall with a 10% probability shall be clearly stated in the stormwater management plan.

Rainfall Duration	Rainfall Depth in Inches
	10-year recurrence interval
1 hour	1.90
6 hours	2.90
12 hours	3.40
24 hours	3.90

8. For storms exceeding the design capacity of the conveyance system, overland drainage routes shall direct the excess runoff to the stormwater management pond proposed for the site.

9. When the Soil Conservation Service TR-55 Method is used to calculate peak flow discharge rates and runoff volumes for the pre-development condition, NRCS curve numbers in the following table shall be used. When other methods for computing runoff are used, they shall assume comparable runoff conditions.

Land Cover	Curve Number
Lawns and residential and commercial landscaped areas	72
Wooded areas	65
All impervious surfaces including roofs, driveways, parking lots, streets, and sidewalks, etc.	95
All streams, channels, ditches, ponds, etc.	99

(d) STORMWATER DISCHARGE QUALITY STANDARDS. Unless otherwise provided, all land development activities subject to this Section shall establish on-site management practices to control the quality of

stormwater discharged from the site. On-site management practices shall be used to meet the following minimum standards:

1. Stormwater discharges shall be treated to remove, on an average annual basis, a minimum of 80% of the total suspended solids load. To achieve this level of control, stormwater practices shall be designed in accordance with the methods set forth in the latest edition of the "Wisconsin Storm Water Manual, Part 2: Technical Design Guidelines for Storm Water Best Management Practices" as published and amended from time-to-time by the State of Wisconsin Department of Natural Resources.

2. Stormwater Quality ponds shall be designed and constructed such that:

    a. Permanent wet detention volume of the facility shall be equal to or greater than the runoff volume resulting from a 1.5-inch, 4-hour rainfall with a Huff Distribution over the area under post-development conditions.

    b. Permanent pond surface area shall be:

        - 1.0% of the drainage area for residential development;
        - 2.0% of the drainage area for business and institutional development;
        - 2.5% of the drainage area for commercial and manufacturing development.

    c. Water quality ponds shall have a sediment forebay area at the pond inlet location. The surface area of the forebay shall be a minimum of 12% of the total pond surface area.

3. Stormwater discharges shall be pre-treated prior to infiltration where necessary to prolong maintenance of the infiltration practice and to prevent discharge of stormwater pollutants at concentrations that will result in exceedances of groundwater preventive action limits or enforcement standards established by the Department of Natural Resources in NR 140 Wisconsin Administrative Code as amended from time to time. Stormwater shall not be injected underground through excavations or openings that would violate NR 812.05 Wis. Admin. Code as amended from time to time.

4. Stormwater ponds and infiltration devices shall not be located closer to water supply wells than indicated below without first notifying the Village.

a. 100 feet from a well serving a private water system or a transient, non-community public water system;

b. 1,200 feet from a well serving a municipal public water system, an other-than-municipal public water system, or a non-transient non-community public water system;

c. The boundary of a recharge area to a wellhead identified in a wellhead area protection plan.

(e) EXCEPTIONS. The Village may establish stormwater management requirements either more or less stringent than those set forth in this subsection, provided that at least one of the following conditions apply:

1. The Department of Public Works determines that a higher level of protection is needed to protect sensitive resources.

2. The Department of Public Works determines that a higher level of protection from flooding is required to protect the public health and safety.

3. The Department of Public Works determines that more restrictive discharge controls are needed because existing downstream conveyance or storage facilities are or will be rendered inadequate as a result of development activity.

4. The Department of Public Works determines that the land development activity is covered by an approved stormwater management system plan that contains management requirements consistent with the purpose and intent of this Section.

5. Provisions are made to manage stormwater by an off-site facility, provided that all of the following conditions for the off-site facility are met:

   a. The facility is in place,

   b. The facility is designed and adequately sized to provide a level of stormwater control equal to or greater than would be provided by on-site practices meeting the requirements of this Section.

   c. The facility has a legally obligated entity responsible for its long-term operation and maintenance.

d. The Department of Public Works finds that meeting the minimum on-site management requirements of this Section is not feasible due to space or site restrictions.

(f) FEE IN LIEU OF ON-SITE STORMWATER MANAGEMENT PRACTICES. Where the Village waives all or part of the minimum on-site stormwater management requirements under this Section, the applicant may be required to pay a fee in an amount determined in negotiation with the Department of Public Works. In setting the fee for land development projects, the Department of Public Works shall consider an equitable distribution of the cost for land, engineering design, construction, and maintenance of stormwater management practices needed to serve the land development.

(6) Permitting Requirements, Procedures and Fees.

(a) PERMIT REQUIRED. No landowner or land operator may undertake a land development activity subject to this Section without receiving a permit from the Department of Public Works prior to commencing the proposed activity.

(b) PERMIT APPLICATION AND FEE. Unless specifically excluded by this Section, any landowner or operator desiring a permit shall submit to the Village a permit application made on a form provided.

1. Unless otherwise excepted by this Section, a permit application must be accompanied by the following in order that the permit application be considered by the Department of Public Works: a stormwater management plan, a maintenance agreement, and a non-refundable permit administration fee.

2. The stormwater management plan, maintenance agreement financial guarantee and fees shall meet the requirements of this Section.

(c) REVIEW AND APPROVAL OF PERMIT APPLICATION. The Department of Public Works shall review any permit application that is submitted with a stormwater management plan, maintenance agreement, and the required fees. The following approval procedure shall be used:

1. Within 30 business days of the receipt of a complete permit application, including all items as required by this subsection, the Department of Public Works shall inform the applicant whether the application, plan and maintenance agreement are approved or disapproved.

2. If the stormwater permit application, plan and maintenance agreement are approved, or if an agreed upon payment of fees in lieu of stormwater management practices is made, the Department of Public Works shall issue the permit.

3. If the stormwater permit application, plan or maintenance agreements are disapproved, the Department of Public Works shall detail in writing of the reasons for disapproval.

4. If additional information is submitted, the Department of Public Works shall have 15 business days from the date the additional information is received to inform the applicant that the plan and maintenance agreement are either approved or disapproved.

(d) PERMIT CONDITIONS. All permits issued under this Section shall be subject to the following conditions, and holders of permits issued under this Section shall be deemed to have accepted these conditions. The Department of Public Works may suspend or revoke a permit for violation of a permit condition, following written notification of the permittee. An action to suspend or revoke this permit may be appealed in accordance with this Section.

1. Compliance with this permit does not relieve the permit holder of the responsibility to comply with other applicable federal, state, and local laws and regulations.

2. The permit holder shall design and install all structural and non-structural stormwater management measures in accordance with tile approved stormwater management plan and this permit.

3. The permit holder shall notify the Village at least 3 working days before commencing any work in conjunction with the stormwater management plan, and within the next working day upon completion of the stormwater management practices. If required as a special condition, the permit holder shall make additional notification according to a schedule set forth by the Village so that practice installations can be inspected during construction.

4. Practice installation required as part of this Section shall be certified "as-built" by a licensed professional engineer. Completed stormwater management practices must pass a final inspection to determine if they are in accordance with the approved stormwater management plan and this Section. The Village shall notify the permit holder in writing of any changes required in such practices to bring them into compliance with the conditions of this permit.

5. The permit holder shall notify the Village of any significant modifications it intends to make to an approved stormwater management plan. The Village may require that the proposed modifications be submitted for approval prior to incorporation into the stormwater management plan and execution.

6. The permit holder shall maintain all stormwater management practices in accordance with the stormwater management plan until the practices are transferred to subsequent private owners as specified in the approved maintenance agreement.

7. The permit holder authorizes the Village to perform any work or operations necessary to bring stormwater management measures into conformance with the approved stormwater management plan, and consents to a special assessment or charge against the property as authorized under Sec. 66.0627 Wis. Stats. as amended from time to time, or to charging such costs against the financial guarantee posted under this Section.

8. If so directed by the Village, the permit holder shall repair at the permit holder's own expense all damage to adjoining municipal facilities and drainage ways caused by stormwater runoff, where such damage is caused by activities that are not in compliance with the approved stormwater management plan.

9. The permit holder shall permit property access to the Village personnel for the purpose of inspecting the property for compliance with the approved stormwater management plan and this permit.

10. Where a stormwater management plan involves changes in direction, increases in peak rate and/or total volume of runoff from a site, the Village may require the permittee to make appropriate legal arrangement with adjacent property owners concerning the prevention of endangerment to property or public safety.

11. The permit holder is subject to the enforceable actions detailed in this Section if the permit holder fails to comply with the terms of this permit.

(e) PERMIT DURATION. Permits issued under this section shall be valid from the date of issuance through the date the Village notifies the permit holder that all stormwater management practices have passed the final inspection required under the Permit.

(7) Stormwater Management Plan Contents.

(a) PLAN REQUIREMENTS. The stormwater management plan required under this Section shall contain any information the Village may need to evaluate the environmental characteristics of the area affected by land development activity, the potential impacts of the proposed development upon the quality and quantity of stormwater discharges, the potential impacts upon water resources and drainage utilities, and the effectiveness and acceptability of proposed stormwater management measures in meeting the performance standards set forth in this Section.

The plan shall include computations of peak flow rates and discharge volumes at each point of discharge into and out of the site concerned under existing and planned development and redevelopment conditions. The data shall include times of concentration to key junctions in flow paths and to points of discharge into and out of the site.

The plan shall consist of narrative descriptions and explanations; maps, charts, and graphs; tables; photographs; supporting calculations; and references to recognized engineering text and manuals as may be necessary to provide a clear and concise description of the plan. The sources of maps and data presented in the plan shall be identified.

Unless specified otherwise by this Section, stormwater management plans shall contain at a minimum the following information:

1. Name, address, and telephone number for the following or their designees: landowner; developer; project engineer for practice design and certification; person(s) responsible for installation of stormwater management practices; person(s) responsible for maintenance of stormwater management practices prior to the transfer, if any, of maintenance responsibility to another party; and

2. A proper legal description of the property proposed to be developed referenced to the U.S. Public Land Survey system or to block and lot numbers with a recorded land subdivision plat.

(b) PRE-DEVELOPMENT SITE CONDITIONS. The plan shall include a map and description of the existing conditions of the site concerned including:

1. A map of the site at a scale of 1 inch equals 100 feet or larger showing the property boundaries referenced to the U. S. Public Land Survey system or to a lot and block of a recorded subdivision plat; the topography of the site including contours shown at an interval of 2 feet or less, together with such spot elevations as may be necessary; the contours and spot elevations shall be referenced to the National Geodetic Vertical Datum of 1929, or to Village Datum with prior written approval from the Village;

2. The hydrologic and hydraulic characteristics of the site including drainage flow paths and directions of flow onto, through, and out of the site; related drainage basin boundaries, including off-site tributary areas; times of concentration;

3. The location of areas where stormwater may collect or percolate into the ground;

4. Locations where runoff enters the site from adjacent tributary areas together with the size of those areas expressed in acres;

5. Locations where runoff leaves the site and the contributing watersheds to each of these locations expressed in acres;

6. 2-year, 24-hour, SCS TYPE II peak runoff rate at each location where runoff leaves the site, expressed in cubic feet per second;

7. Ground water elevations referred to the National Geodetic Vertical Datum of 1929 or to Village Datum with prior written approval from the Village;

8. Soils by hydrologic group;

9. Cover type and condition;

10. Location and extent of impervious surfaces, including type and condition of the surfaces;

11. Locations and outlines of all buildings or other structures;

12. Location of all receiving bodies of surface water on or within 100 feet of the site into which stormwater flows;

13. Locations and size of wetlands on or within 100 feet of the site;

14. Location and extent of the 100 year recurrence interval flood hazard area associated with any perennial stream or watercourse on or within 100 feet of the site;

15. Information regarding current water quality objectives and current water quality conditions in any perennial watercourses located on or within 100 feet to the site;

16. Locations, sizes, and elevations of all existing storm sewers, channels, ditches, detention or retention ponds, or other

engineered drainage facilities on or within 100 feet of the site; the elevations being referred to the National Geodetic Datum of 1929 or to Village Datum with prior written approval from the Village; and

17. Locations of any existing water supply wells and wellhead protection areas.

(c) PROPOSED POST-DEVELOPMENT SITE CONDITIONS. The plan shall describe the alterations proposed at to the site and the resulting proposed post-development conditions. The description shall include:

1. Explanation of the provisions to preserve and use natural topography and land cover features to minimize changes in peak flow runoff rates and volumes to surface waters.

2. Explanation of any restrictions on stormwater management measures in the development area imposed by wellhead protection plans and ordinances.

3. Proposed changes in the planimetry of the site, and in the topography of the site by contours having the same contour interval and referred to the same datum as used to present the topography of the existing site conditions;

4. The location and outline of all proposed buildings or other structures;

5. Changes in the location, extent and type of impervious surfaces;

6. The location and extent of areas where vegetation is to be disturbed or planted;

7. Impacts on existing natural storage or infiltration areas;

8. Changes in the drainage flow paths into, through, and out of the site, and related changes in drainage basin boundaries;

9. The location, elevations, and sizes of all proposed minor and major stormwater management facilities; the former including all storm sewers and inlets, and the latter including curbed roadways, roadway ditches, culverts, storage facilities, and interconnected flow paths; all elevations being referred to the National Geodetic Vertical Datum of 1929 or to Village Datum with prior written approval from the Village;

10. Any changes to lakes, streams, watercourses, or wetlands on or within 100 feet of the site concerned; and

11. The location and widths of required public rights-of-way or easements needed to accommodate the recommended stormwater management facilities.

(d) ANTICIPATED IMPACTS. The plan shall contain a description of the following anticipated impacts of stormwater runoff from the proposed development, redevelopment, or land division as managed by the facilities and measures recommended in the plan:

1. Computed 100-year, 24-hour, SCS TYPE II peak runoff rate at each location where runoff leaves the site, expressed in cubic feet per second;

2. Computed 50-year, 24-hour, SCS TYPE II peak runoff rate at each location where runoff leaves the site, expressed in cubic feet per second;

3. Computed peak runoff rate corresponding to 0.15 cfs/acre;

4. Computed peak runoff rate corresponding to 0.5 cfs/acre;

5. Computed runoff volume for the 1.5-inch, 4-hour rainfall with a Huff Distribution;

6. All major assumptions used in developing input parameters shall be clearly stated. The computations shall be made for each discharge point in to and out of the site, and the geographic areas used in making the calculations shall be clearly cross-referenced to the required map(s), including off-site tributary watershed areas;

7. Changes in the locations and conveyance capacities of stormwater discharge points from and to the site concerned;

8. Adequacy of receiving storm sewer, engineered stormwater management facility or watercourse to convey or store the anticipated peak rate of stormwater discharge from the site concerned, giving due consideration to existing and off-site flows;

9. Changes in the location and extent of the 100-year recurrence interval flood hazard area of any perennial watercourse location within, through, or within 100 feet of, the site concerned;

10. Results of investigations of soils and groundwater required for the placement and design of stormwater management measures; and

11. Changes in ground water elevations referred to National Geodetic Vertical Datum of 1929 or to Village Datum with prior written approval from the Village.

(e) PROPOSED STORMWATER MANAGEMENT FACILITIES AND MEASURES. The plan shall include a definitive description of the proposed stormwater management facilities and measures for the control of the quantity and quality of the anticipated stormwater runoff from the proposed development, redevelopment, or land division.
All site investigations, plans, designs, computations, and drawings shall be certified as prepared in accordance with accepted current engineering practice and in accordance with "Wisconsin Storm Water Manual, Part 2: Technical Design Guidelines for Storm Water Best Management Practices," "Wisconsin Construction Site Best Management Practices Handbook," and "Standard Specifications for Sewer and Water Construction in Wisconsin."

The description of the proposed management facilities shall include:

1. For detention and retention facilities: locations, areas, depths, volumes, inlet and outlet configurations, and elevation of the bottoms, and of key inlet and outlet control structures; all elevations being referred to National Geodetic Vertical Datum of 1929 or to Village Datum with prior written approval from the Village;

2. For conveyance facilities: locations of inlets and manholes and associated rim and invert elevations, and pipe sizes, slope and materials; locations, elevations, and cross sections of ditches, swales and channels; and culvert sizes, inlet and outlet configurations and elevations; all elevations being referred to National Geodetic Vertical Datum of 1929 or to Village Datum with prior written approval from the Village;

3. Design computations and all applicable assumptions for the stormwater conveyance (open channel, closed pipe, etc.) system;

4. Detailed drawings including cross-sections and profiles of all permanent stormwater conveyance and treatment practices;

5. Design computations and all applicable assumptions for stormwater quality practices (sedimentation type, filtration type, infiltration type) as needed to show that practices are appropriately sized to accommodate runoff from the 1.5-inch rainfall;

6. For practice designs that depart from those specified in the "Wisconsin Storm Water Manual, Part 2: Technical Design Guidelines for Storm Water Best Management Practices", the results of continuous simulation modeling, conducted according to the guidelines established in that manual, shall be presented in such a way as to show the reduction in average annual total suspended solids loading from the developed site;

7. Erosion Control Plan in accordance with the "Wisconsin Construction Site Best Management Practices Handbook," published and periodically updated by the Wisconsin Department of Natural Resources;

8. Measures to abate any potential pollution of surface and ground waters;

9. A schedule for the construction of the recommended stormwater management facilities and estimates of attendant capital and operation and maintenance costs;

10. A maintenance plan developed for the life of each stormwater management practice including the required maintenance activities and maintenance activity schedule;

11. A Landscaping Plan in accordance with "Wisconsin Storm Water Manual, Part 2: Technical Design Guidelines for Storm Water Best Management Practices;" and

12. Other information as needed by the Village to determine compliance of the proposed stormwater management measures with the provisions of this Section.

(g) EXCEPTIONS. The Village may prescribe alternative submittal requirements for applicants seeking an exemption to on-site stormwater management performance standards under this Section.

(8) Maintenance Agreement.

(a) MAINTENANCE AGREEMENT REQUIRED. The maintenance agreement required for stormwater management practices under this Section shall be an agreement between the Village and the permittee to provide for maintenance of stormwater practices beyond the duration period of this permit. The agreement or recordable document shall be recorded with the Milwaukee County Register of Deeds so that it is binding

upon all subsequent owners of land served by the stormwater management practices.

(b) AGREEMENT PROVISIONS. The maintenance agreement shall contain the following information and provisions:

1. Identification of the stormwater facilities and designation of the drainage area served by the facilities;

2. A schedule for regular maintenance of each aspect of the stormwater management system consistent with the stormwater management plan;

3. Identification of the landowner(s), organization or municipality responsible for long-term maintenance of the stormwater management practices;

4. The landowner(s), organization, or municipality shall maintain stormwater management practices in accordance with the schedule included in the agreement;

5. The Village is authorized to access the property to conduct inspections of stormwater practices as necessary to ascertain that the practices are being maintained and operated in accordance with the agreement;

6. The Village shall maintain public records of the results of the site inspections, shall inform the landowner responsible for maintenance of the inspection results, and shall specifically indicate any corrective actions required to bring the stormwater management practice into proper working condition;

7. That if the Building Inspector notifies the party designated under the maintenance agreement of maintenance problems that require correction, the specific corrective actions shall be taken within a reasonable time frame determined by the Village; and

8. The Village is authorized to perform the corrective actions identified in the inspection report if the landowner does not make the required corrections in the specified time period. The Village shall enter the amount due on the tax rolls and collect the money as a special charge against the property pursuant to Sec. 66.0627 Wis. Stats., as amended from time to time.

(9) Financial Guarantee.

(a) ESTABLISHMENT OF THE GUARANTEE. The Village may require the submittal of a financial guarantee, the form and type of which shall be acceptable to the Village. The financial guarantee shall be in an amount determined by the Village to be the estimated cost of construction and the estimated cost of maintenance during the period which the designated party in the maintenance agreement has maintenance responsibility. The financial guarantee shall give the Village the authorization to use the funds to complete the project if the landowner defaults or does not property implement the approved stormwater management plan.

(b) CONDITIONS FOR RELEASE. Conditions for the release of the financial guarantee are as follows:

1. The Village shall release the portion of the financial guarantee established to assure installation of stormwater practices, minus any costs incurred by the Village to complete installation of practices, upon submission of "as built plans" by a licensed professional engineer. The Village may make provisions for a partial pro-rata release of the financial guarantee based on the completion of various development stages; and

2. The Village shall release the portion of the financial security established to assure maintenance of stormwater practices, minus any costs incurred by the Village, at such time that the responsibility for practice maintenance is passed on to another entity via an approved maintenance agreement.

(10) Fee Schedule.

(a) BASIS. Fees as described in this Section shall be determined by the Village Board from time to time. Fees shall be related to the costs involved in handling permit applications, reviewing plans, conducting site inspections, and administering the stormwater management program.

(11) Illicit Discharges and Unauthorized Connections.

(a) DISCHARGES PROHIBITED. No person may discharge, spill or dump substances or materials which are not entirely composed of stormwater into receiving bodies of water, storm sewers of drainage facilities, or onto driveways, sidewalks, parking lots or other wares that discharge into the Village drainage system.

(b) CONNECTIONS PROHIBITED. It shall be a violation of this chapter to connect a sanitary sewer pipe or drain, connect a pipe or drain that contributes pollutants associated with industrial activity; or connect any other hydraulic conveyance facility that introduces non-stormwater discharges to the Village stormwater drainage system and facilities. All such non-stormwater discharges into the Village stormwater system and facilities shall be defined as illicit discharges.

(c) EXEMPTIONS. The following activities are exempt from the provisions of this section unless found to have an adverse impact on the stormwater:

1. Discharges authorized by a permit issued by the Wisconsin Department of Natural Resources;

2. Discharges resulting from fire fighting activities;

3. Discharges in compliance with construction site erosion controls or stormwater management regulations contained in this Section;

4. Facility maintenance activities undertaken by any Federal, State, County, or Municipal agency, such activities, however, being subject to construction erosion control measures; and

5. Discharges from uncontaminated pumped ground water, potable water source, roof drains, foundation drain and sump pump, air conditioning condensation, springs, lawn watering or irrigation, individual residential car washing, and swimming pools if the water has been dechlorinated;

(d) PENALTY. Violations shall be subject to enforcement procedures and penalties set forth in this Section.

(12) Inspection, Enforcement and Penalties.

(a) INSPECTION. Village personnel shall carry out inspections, investigations, and monitoring to assess and confirm compliance with the requirements of this Section.

1. Village Personnel will inspect, conduct surveillance, and monitor the municipal drainage system and discharge outfalls on an annual basis to assess system performance and water quality. Findings of non-compliance with this Section during regular inspection, surveillance, or monitoring of the Village drainage system shall initiate further investigation to identify the source of the pollution discharge to the drainage system.

2. Village Personnel will inspect land development activity for compliance with permit conditions as defined in this Section.

(b) PUBLIC NUISANCE. The following shall be deemed to constitute public nuisances and may be prosecuted as such by the Village or by aggrieved property owners:

1. Any development, redevelopment, or property land division that is commenced without an approved stormwater management plan as required by this Section;

2. Any land development activity initiated after the effective date of this Section by any person, firm, association, or corporation subject to the Section provisions shall be deemed a violation unless conducted in accordance with said provisions;

3. Any drainage facility not maintained in accordance with this Section;

4. Any illicit discharge as defined in this Section to the Village stormwater drainage system and facilities; and

5. Any activity that adversely impacts on surface or ground water quality or endangers the health and safety of the public.

(c) COMPLIANCE ORDER. The Building Inspector shall notify the responsible owner or operator by certified mail of any non-complying activity. The notice shall describe the nature of the violation, remedial actions needed, a schedule for remedial action, and additional enforcement action that may be taken.

1. Upon receipt of written notification from the Building Inspector, the responsible owner or operator of the non-complying activity or property shall make corrections as necessary to meet the requirements set forth in this ordinance.

2. If the permit holder or the person(s) in violation of this Section continue non-compliant practices, Village Personnel may enter upon the land and perform the work or other operations necessary to bring the said activity into conformance with requirements of this Section. The Village shall keep a retailed accounting of the costs and expenses of performing this work. If applicable, these costs and expenses shall be deducted from any financial security posted pursuant to this Section. Where such a security has not been established, or where such a security is sufficient to cover these costs, the costs and expenses shall be entered on the tax roll as a

special charge against the property and collected with any other taxes levied thereon for the year in which the work is completed.

3. The Building Inspector is authorized to post a stop order on all activity in violation of this Section, or to request the Village attorney to obtain a cease and desist order.

4. If the violations to this Section are likely to result in damage to private properties, public facilities, or waters of the state, Village Personnel may take emergency actions necessary to prevent such damage. The costs incurred by the Village plus interest and legal costs shall be billed to the owner of title of the property.

5. The Department of Public Works may revoke a permit issued under this Section for non-compliance with this Section.

6. Any person, firm, association, or corporation who does not comply with the provisions of this Section shall be subject to a forfeiture of not less than $50.00 nor more than $1,000.00 per offense, together with the costs of prosecution. Each day that the violation exists shall constitute a separate offense.

7. Compliance with this Section may be enforced by injunction, citation, and abatement of nuisance or other appropriate and available remedy. It shall not be necessary to prosecute for forfeiture before resorting to injunctional proceedings.

(13) Appeals.

(a) BOARD OF APPEALS. The Board of Appeals created pursuant to Section 16.20 of the Municipal Code as authorized by Sections 62.23(7)(e) and 68. 11, Wis. Stats. as amended from time to time:

1. Shall hear and decide appeals where it is alleged that there is error in any order, decision or determination made by the Village in administering this Section;

2. Upon appeal, may authorize variances from the provisions of this Section which are not contrary to the public interest and where owing to special conditions a literal enforcement of the provisions of this Section will result in unnecessary hardship;

3. Shall use the rules, procedures, duties and powers authorized by statute in hearing and deciding appeals and authorizing variances; and

4. Shall be authorized to grant full or partial Special Exceptions pursuant to Section 16.20 of the Municipal Code.

(b) WHO MAY APPEAL. Appeals to the Board of Appeals may be taken by any aggrieved party.

SECTION TWO: All ordinances or parts of ordinances conflicting with the provisions of this ordinance are hereby to such extent repealed.

SECTION THREE: This ordinance shall take effect the day after publication in the Whitefish Bay Herald.

PASSED AND ADOPTED this ___ day of _____, 2001.

_____
James H. Gormley, President

Countersigned:

_____
Barbara C. Patin, Clerk-Treasurer